

**EFFICIENCY OF FREE TRADE AGREEMENTS:
DID THE REDUCTION OF TRADE BARRIERS HAVE
ANY EFFECT ON INCREASING TRADE BETWEEN
SLOVENIA AND THE CEFTA COUNTRIES?**

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1. INTRODUCTION

Following the breakup of former Yugoslavia and the loss of most of the domestic market, Slovenia embarked on an intensive drive to reorient its trade. In addition to the Cooperation and European Agreements with the EU, Slovenia was rapidly entering into free trade agreements with EFTA and CEFTA member states as well as with other European countries. Trade with CEFTA countries in particular has been showing above average rates of growth. In foreign trade theory it is a common feature that the abolishment of barriers to trade has an effect on the expansion of trade flows. From this perspective we can assume that the reduction of tariffs and other barriers to trade (introduction of preferential tariffs, tariffication of agricultural quotas and the gradual reduction of variable import levies on agricultural products within the framework of Protocol no. 6) has led to an expansion of bilateral trade between Slovenia and the CEFTA countries in the period from 1993 to 1997.

In the present paper I explore to which extent the expansion of trade between Slovenia and CEFTA countries has been affected by the reduction of mutual trade barriers as compared to other factors. More precisely, I am interested in whether the expansion of trade is due to the reduction of barriers to trade or was it autonomous and would have occurred regardless of the free trade agreement.

The paper is organized as follows. Section 2 gives a short overview of the volume and the structure of trade as well as the dynamics of trade barriers between Slovenia and the CEFTA countries in the period 1992-1997. Section 3 gives an empirical estimation of the impact of reduction of trade barriers and the impact of changes in domestic demand on the expansion of bilateral trade between Slovenia and CEFTA countries. The conclusion gives a short summary of the main findings of the paper.

2. DYNAMICS OF BILATERAL TRADE AND TRADE BARRIERS

2.1. DYNAMICS AND STRUCTURE OF BILATERAL TRADE

After the fall of the Iron Curtain and the break-up of Yugoslavia Slovenia started actively seeking new external markets. In addition to the EU Member States' markets (mostly Germany), Slovenia accelerated its push to export into CEFTA countries. For easier access to a potentially very lucrative market, a logical first step was to remove mutual barriers to trade and to join the CEFTA agreement.

Table 1: Geographic structure of total Slovenian foreign trade in the years 1992 – 1999 (in %)

EXPORTS

Country	1992	1993	1994	1995	1996	1997	1998	1999 ¹
EU	60.9	63.8	66.2	67.8	65.0	63.6	65.5	66.9
Hungary	1.1	1.5	1.4	1.3	1.3	1.4	1.6	1.6
Czechia ²	1.4	0.8	1.2	1.6	1.8	1.8	1.7	1.7
Slovakia		0.4	0.4	0.6	0.7	0.7	0.8	0.7
Poland	1.0	1.5	1.4	1.3	1.7	1.9	2.0	2.2
Romania	0.1	0.3	0.2	0.3	0.3	0.3	0.5	0.5
CEFTA	3.6	4.5	4.7	5.1	5.7	6.0	6.5	6.7

IMPORTS

Country	1992	1993	1994	1995	1996	1997	1998	1999 ¹
EU	57.8	64.4	68.2	68.0	67.5	67.4	69.4	69.1
Hungary	2.6	2.6	2.7	2.9	2.5	3.1	2.4	2.5
Czech ²	2.0	1.7	2.5	2.7	2.5	2.5	2.6	2.9
Slovakia		0.4	0.8	0.9	1.0	1.1	0.9	0.9
Poland	0.3	0.2	0.3	0.4	0.5	0.6	0.8	1.1
Romania	0.2	0.3	0.3	0.4	0.3	0.2	0.5	0.4
CEFTA	5.0	5.3	6.7	7.2	6.8	7.5	7.2	7.7

Source: SURS; own calculations.

¹ Data for the first 8 months of 1999.

² Data for Czechoslovakia in 1992.

The results of Slovenia's search for new markets can be seen in the rapid expansion of trade with CEFTA countries. The volume of trade with most countries more than tripled in the period from 1992 to 1998: total exports to CEFTA countries grew by an absolute 144% and imports grew by 147%. In comparison, it must be noted that total Slovenian exports in the same period grew by 36% and imports by 73%, whereas exports to the EU grew by 46% and imports by 107%.

The exceptional dynamics of the growth of bilateral trade with CEFTA countries is also reflected in the calculated average annual rates of growth in this period, which by far exceed average rates of growth of total Slovenian trade and trade with the EU in this period. Average growth rate of exports to all CEFTA countries is twice the growth rate of exports to EU and triple the growth rate of total exports. Possible reasons for this are the initially low level of bilateral trade, rapid elimination of trade barriers with CEFTA countries within the framework of free trade agreements and/or the substitution of the former Yugoslav market with the markets of CEFTA countries with the purpose of purchasing important deficient raw materials and agricultural products as well as the sale of finished industrial products.

Table 2: Average annual rates of growth for trade between Slovenia and CEFTA countries in the period 1992-1998 (in %).

Country	Exports	Imports
Hungary	11,9	10,0
Czech Republic ²	15,7	17,5
Slovakia	24,6	33,6
Poland	17,8	31,8
Romania	47,1	49,9
CEFTA	16,3	17,6
EU	7,1	13,4
Total trade	5,7	10,0

Source: SURS; own calculations.

As a result of rapidly increasing bilateral trade, the CEFTA countries' share in total Slovenian exports in the period 1992-1999 increased from 3.6 to 6.7% and their share in total imports increased from 5 to 7.7%. It is interesting to note, that the shares of individual CEFTA countries' trade in total trade increased nearly equally. In relative terms, Hungary's share experienced the slowest growth, both in exports (increasing from 1.1% to 1.6%) and in imports (decreasing from 2.6% to 2.5%), whereas – with the exception of Czechia - the other CEFTA countries' shares more than doubled.

Slovenia's exports to CEFTA countries consist nearly exclusively of industrial products, as the combined exports of the agricultural products and food (section A and industry DA) account for just 2.3% of the total exports. With a 40% share, chemical products (and within this industry, mainly pharmaceuticals) represent the biggest part of exports of industrial products, followed by the metal industry's products, machinery, paper, and electrical and optical equipment. CEFTA represents an important sales market for some industries (in particular for oil derivatives, chemical products, paper, rubber and plastic products, and metal products), as in these industries shares of exports of individual products in total industry's exports significantly exceed the share of exports to CEFTA countries in total Slovenian exports. The structure of exports to individual CEFTA countries do not differ substantially from the structure of total exports to CEFTA countries.

The structure of Slovenian imports from CEFTA countries differs significantly from the structure of exports, especially by the relatively high share of imports of agricultural and food products (nearly 20% in total), chemicals, iron and steel as well as unprocessed wood. The significance of the CEFTA countries' markets as a purchasing market for the Slovenian manufacturing is evident from the fact, that 27% of all agricultural and food products that Slovenia imports originate from CEFTA countries. The situation is similar for the acquisition of iron and steel (16% of all the iron and steel, that Slovenia needs, is purchased in CEFTA countries). Of similar significance is wood, followed by certain mineral nonmetals, chemicals etc.

Table 3: Structure of Slovenia's foreign trade with CEFTA countries in 1998.

NACE	Area and industry	Share of total exports to CEFTA	Share of total exports of sector	Share of total imports from CEFTA	Share of total imports for sector
A	AGRICULTURE, HUNTING AND FORESTRY	0.38	3.55	6.08	11.28
B	FISHING	0.00	0.00	0.00	0.26
C	MINING	0.12	11.75	1.09	7.31
D	FOOD PROCESSING INDUSTRY	99.50	5.74	92.83	6.77
DA	Food, beverages, animal feed, tobacco	1.94	2.82	13.16	16.09
DB	Textiles and textile products	3.76	2.05	3.95	3.26
DC	Leather and leather products	0.73	1.70	0.40	1.80
DD	Wood and wood products	0.68	0.89	2.07	10.88
DE	Paper, cardboard, publishing and printing	9.02	10.05	3.82	6.73
DF	Coke, oil derivatives, nuclear fuels	1.48	27.71	8.18	9.61
DG	Chemicals, chemical products and artificial fibers	39.41	21.07	12.95	7.52
DH	Rubber and plastic products	5.06	6.83	2.37	4.99
DI	Other non-metal mineral products	2.56	4.85	3.14	9.48
DJ	Metals and metal products	12.82	6.57	27.31	16.44
DK	Machines and devices	10.97	5.02	4.61	3.32
DL	Electrical and optical equipment	7.59	3.84	3.63	2.11
DM	Vehicles and watercraft	1.44	0.64	5.30	2.38
DN	Furniture and other products	2.04	1.76	1.92	6.02

Source: SURS; own calculations.

The structure of imports from individual CEFTA countries differs slightly among them. Especially notable are Hungary and Romania, from which there are the least industrial imports (only about 60% and 75% of imports from Hungary and Romania, respectively, are non-food products). Hungary accounts for approximately 80% of total Slovenian imports of agricultural and food products from CEFTA countries. From a global perspective, Hungary represents more than 20% of all imports of agricultural and food products to Slovenia. The Czech Republic and Slovakia export mostly iron and steel to Slovenia (more than 40% of their exports) and in addition to this Slovakia exports chemical raw materials (16%) and the Czech Republic cars (11%). The largest part of Polish exports to Slovenia is chemical raw materials (24%) followed by iron and steel (15%).

2.2. THE DYNAMICS OF TRADE BARRIERS

To denote trade barriers in this analysis, we use exclusively data on actually paid import duties, including paid customs duties, variable import levies and other import taxes. In the general sense, of course, trade barriers have a wider meaning, as they also encompass untariffed import quotas and other forms of non-tariff barriers (rules on domestic content and the origin of goods, voluntary export restraints, phytosanitary regulations, technical standards, public procurement, etc.), but these cannot be expressed quantitatively.

Table 4 gives a disaggregated insight (according to NACE) into the reduction of actual import duties paid for Slovenian imports from four of the CEFTA countries for the period 1992 - 1997. The Table clearly shows that Slovenia's general liberalization of foreign trade and the implementation of free trade agreements with CEFTA countries have resulted in a substantial decrease of import duties for industrial products (with the exception of food products) from these countries. In 1997 the average import duty for the import of most industrial products from CEFTA countries was equal to or close to zero, which points toward completely liberalized import of industrial products from CEFTA countries. Especially notable are Czechia and Slovakia, with which the trade in industrial products has already been completely liberalized.

Table 4: Average import duties paid¹ for imports from CEFTA in the period from 1992 to 1997 (in %).

	Hungary		Czechia		Slovakia		Poland	
NACE	1992	1997	1992	1997	1992	1997	1992	1997
A	6.59	3.42	14.31	3.64	14.31	1.88	8.92	8.95
B			17.79	15.00	17.79	14.99		
CA	11.12	0.00	6.93	0.00	6.93		13.84	0.00
CB	3.28	0.09	2.50	0.39	2.50	0.00	1.47	0.00
D	9.67	4.34	9.11	0.49	9.11	0.19	5.21	1.91
DA	16.37	14.26	13.00	5.64	13.00	8.23	6.34	11.36
DB	5.23	4.60	10.65	0.70	10.65	0.63	6.31	6.26
DC	4.26	1.53	5.60	2.88	5.60	0.79	1.00	5.49
DD	1.60	1.21	1.49	0.18	1.49	0.00	1.00	0.01
DE	6.54	1.54	3.71	0.25	3.71	0.18	7.53	0.07
DF	6.80	0.11	9.69	0.01	9.69	0.00	5.61	0.00
DG	7.84	0.48	4.74	0.49	4.74	0.01	1.61	1.38
DH	9.71	1.01	14.77	0.48	14.77	0.15	24.65	1.35
DI	9.16	0.90	12.94	0.12	12.94	0.16	9.63	0.07
DJ	2.26	0.32	5.76	0.10	5.76	0.07	4.21	0.85
DK	13.72	1.22	10.55	0.56	10.55	0.21	15.77	1.51
DL	11.12	2.42	7.16	0.59	7.16	1.57	5.55	1.22
DM	2.07	0.60	25.01	0.75	25.01	0.90	21.78	4.07
DN	13.62	1.12	12.70	0.82	12.70	0.12	0.78	1.00

Source: SURS; own calculations.

- ¹ The average import duty paid includes customs duties, variable import levies and other import taxes.

The liberalization of trade for agricultural and food products has been significantly slower. With the coming into force of additional protocol no. 6 (in 1998) these two sectors have also experienced more rapid reduction of import duties. However, most of the effects will only become apparent after the year 2000.

3. THE EFFECTS OF REDUCTION OF TRADE BARRIERS ON BILATERAL TRADE

3.1. METHODOLOGY

According to the theory of foreign trade the elimination of mutual trade barriers should have an effect on expansion of bilateral trade flows. Of course, a change in trade barriers is not the ultimate factor affecting changes in bilateral trade flows. The most important factor is, of course, domestic demand, which can be effectively expressed in terms of domestic consumption and which reflects all autonomous effects on changes in imports. In the case of strong domestic demand for a certain deficient product, imports of this product will increase despite large trade barriers. Likewise, there will be no increase in imports of this product when domestic consumption is saturated, except in cases where a change of trade barriers with an individual trading partner significantly affects the competitiveness of importing this product from that country, compared to other trading partners. Of course changes in trade flows are also affected by other factors, which are tied to the characteristics of a certain product – most importantly, whether these are homogenous or differentiated products as well as the quality of the products in relation to their price. The latter factors are difficult to quantify in empirical analysis and have thus not been accounted for in further analysis.

In view of this, I have used the following equations to estimate the actual impact of reduction of trade barriers and of other autonomous factors on the expansion of bilateral trade flows between Slovenia and CEFTA countries:

$$(1) \quad \hat{M}_{ijk} = f\left(\hat{T}_{ijk}, \hat{C}_{ik}\right),$$

$$(2) \quad \hat{X}_{ijk} = f\left(\hat{T}_{jik}, \hat{C}_{jk}\right),$$

All equations marked with a circumflex indicate changes. More precisely, \hat{M}_{ijk} is the change in imports of product i of country j from country k , \hat{X}_{ijk} is the change in imports of product i from country j to country k , \hat{T}_{ijk} is the change in import duties and/or trade barriers for product i in country j for imports from country k (and the reverse \hat{T}_{jik}) and \hat{C}_{ij} (\hat{C}_{ik}) is the change in total consumption of product i in country j and/or k . All changes are defined as the difference in value of the variable between the final and the initial year and are expressed in percentage points. All variables refer to individual products defined in accordance with the chosen methodology and not to aggregate data. It must be noted that domestic consumption of a particular product is defined as the sum of total of domestic production and of imports of this product, minus exports of this product in the time period selected.

The relationships between variables in equations (1) and (2) are as follows. In equation (1) I have assumed, that the change in Slovenia's imports of a certain product from CEFTA countries is dependent on the change in the level of trade barriers for importing that product from CEFTA countries as well as the change in domestic consumption of the product during this period. I therefore expect that the extent of the expansion of imports of a particular product is dependent on the extent of the reduction of trade barriers for that product and the expansion of domestic consumption of the product. The relationship between the change in imports and the change in trade barriers is, as expected, negative (the greater the cut in trade barriers, the more imports increase), whereas the relationship between the change of imports and the change in domestic consumption is positive (imports increase with the expansion of domestic demand).

The relationship in equation (2) is similar: I expect, that the greater the cut in trade barriers for the import of a particular product from Slovenia into CEFTA countries and the greater the growth in demand for the product on CEFTA countries' markets, the greater will be the expansion of Slovenian exports of that product to CEFTA countries. As expected, the relationship between the change in Slovenian exports and the change in trade barriers of importing CEFTA countries is negative, whereas the relationship between the change in Slovenian exports and the change in demand in CEFTA countries is positive.

Before performing any econometric tests, the following methodological issues need to be resolved: (1) the question of choosing a method of econometric analysis, (2) the question of selecting the size of the production sample, (3) the question of determining an appropriate time period and (4) the question of specifying the variables to be captured.

First, there are, in principle, two options available for the method of econometric analysis: time series analysis and cross-section analysis. With time series analysis a problem appears because:

1. in the case of import duties, reduced within the framework of free trade agreements, the changes are annual and the period for the realization of the agreement is too short for performing time series analysis, and
2. time series analysis does not allow an analysis at a very disaggregated level, but is usually used for analysis at the level of aggregate data (in other words, the analysis would have to be performed for each product individually, which would, in view of the large number of products, extremely time consuming).

Cross-section analysis, on the other hand, enables the capture of a large quantity of separated data, which is essential from the point of view of this analysis as it is possible to assume, that changes in trade barriers explicitly affect changes in foreign trade flows at a very disaggregated production level and less obviously at the aggregate level.

Second, the choice of sample size is solely a matter of the availability of necessary data. With this, there is an immediate problem: for Slovenia, all the necessary data for testing equation (1) is available, but industrial

production data for calculating domestic consumption for CEFTA countries is not available at the appropriately disaggregated level (but only at the level of 14 industries, which does not provide enough observations for a statistically significant test). Additionally it is possible to get data for CEFTA countries on the official tariff rates at the level of the 3-digit SITC, which at this level of aggregation is not comparable to the 3-digit NACE, on which the industrial data is based. A consequence of this problem is:

1. that only a reduced version of equation (2) can be tested (only the impact of changes in trade barriers on the expansion of Slovenian exports to CEFTA countries), and
2. that the test data samples of the complete equation (1) and the reduced equation (2) are not of equal size.

As mentioned, data on Slovenia's foreign trade with CEFTA countries is available at the highest possible disaggregated level, which is accompanied by Slovenian statistics at the level of the Combined Nomenclature of Tariffs (CN). Basically, this nomenclature contains over 10,000 production items, but Slovenia's trade with individual CEFTA member countries only involves about 800 to 2500 production items. As far as foreign trade data is concerned, econometric analysis would thus be possible on a sample of the indicated size, depending on the selected country. The problem limiting the size of the sample is the consumption variable, which is defined as the sum of domestic production and of imports of a specific product, minus the exports of that product in the selected time period. Production statistics are not even near as disaggregated as the CN. Data on Slovenian industrial production is available at the level of the 3-digit NACE and when this data is adjusted for the appropriate foreign trade flows with the appropriate partner country, we get samples of varying size for individual countries. The size of the sample for testing equation (1) is dependent on the exporting country and ranges from 82 to 99 export items (according to NACE-3). Depending on the importing country, the size of the sample for testing equation (2) is from 136 to 178 production items (according to SITC-3).

Third, the selection of the time period depends on the beginning of the validity of the free trade agreement between Slovenia and the individual CEFTA country. With Czechia and Slovakia the agreement came into force on January 1st, 1994, with Hungary on July 1st, 1994 and with Poland on January 1st, 1995. Hence, for Czechia, Slovakia and Hungary year 1993 is considered to be the last year before trade barriers were reduced. Similarly, for Poland year 1994 has been taken as the initial year before the agreement came into force. I have chosen 1996 for Czechia and Slovakia and 1998 for Hungary and Poland as the final year of the elimination of trade barriers.

The fourth methodological problem is the specification of captured variables. For import and export data I have used Slovenian data on the exports and imports of individual products from/to individual CEFTA countries. However, there is an availability problem for data on the size of the trade barriers. There are no problems for data for Slovenia, since I have access to the data on actual import duties paid for individual products from individual CEFTA countries. It includes both tariffs and variable import duties as well as potential other import duties. The actual import duties paid is thus the best indicator of the actual size of (measurable) trade barriers.

Due to the unavailability of data on the actual import duties paid for the import of individual products from Slovenia into CEFTA countries, I have used the official tariff rates in CEFTA countries before the coming into force of agreements as an estimate of existing trade barriers for imports from Slovenia. For the final year I have assumed that tariffs on non-food industrial products are equal to zero or that they have been cut by a percentage specified in the agreement (food).

The next question for specifying variables is the calculation of the changes of absolute data. Several approaches are possible. The first is to calculate the rate of growth of a variable between the initial and the final year. The problem with this approach is that trade barriers are defined as a percentage and this results in the calculated rate of the reduction of trade barriers not reflecting the actual change in the size of the trade barrier (lowering import duties by 100% can mean both a cut in duties from 25% to 0% and a cut in duties from 1% to 0%, regardless of the fact that in the first example the change is 25 times that of the second example). Another approach is to calculate the change of a specific variable as the simple difference in the

value of the variable between the initial and the final year. Thus all variables remain within the absolute terms and consequently the results can be easily interpreted with econometric tests.

3.2. RESULTS OF THE ECONOMETRIC TESTS

In this section I use equation (1) to analyze the actual impact of trade liberalization with CEFTA countries on Slovenian imports from these countries and try to determine whether the expansion of imports was due to the reduction of trade barriers or an autonomous expansion of Slovenian imports from these countries, which is independent from the liberalization of trade.

To assess the actual impact of trade liberalization and increased domestic demand on imports from CEFTA countries, a progressive method has been used. Thus I first estimate the reduced version of equation (1) i.e. only the impact of the reduction of import duties on expansion of imports, and then the complete equation (1) is estimated. Because of the unavailability of disaggregated data on domestic demand in individual CEFTA countries, only the reduced version of equation (2) has been estimated.

3.2.1. Effects of Trade Liberalization on Increased Imports from CEFTA Countries

Table 5 shows the results of the econometric estimations of the reduced version of equation (1) using various assumptions. The results of the basic estimation (regression of the changes in imports on the changes in import duties) are shown in the top left section of the Table. The results unequivocally show that, with no exception, there is no relationship between changes in import duties and changes in imports from individual CEFTA countries (none of the deterministic coefficients and the regression coefficients is significantly different from zero). The correct sign (negative) was determined only for Poland. These results are highly surprising, as it is both theoretically and based on the empirical analysis in the second section of this paper, possible to infer that a certain correlation should have exist between the relatively large reduction in import duties and the relatively large expansion of imports from CEFTA countries.

Table 5: The impact of reduction of import duties on the expansion of Slovenian imports from individual CEFTA countries for the period 1993-1998.

N=82-99	Absolute difference (all products)			Rank of difference (all products)		
Country	T coeff.	t-stat	R ²	T coeff.	t-stat	R ²
Hungary	0.007	0.167	-0.010	0.041	0.404	-0.009
Czechia	0.040	0.626	-0.006	-0.090	-0.895	-0.002
Slovakia	0.028	0.875	-0.003	-0.017	-0.154	-0.012
Poland	-0.013	-1.213	0.005	-0.122	-1.214	0.005

N=35	Absolute difference (largest import products)			Rank of difference (largest import products)		
Country	T coeff.	t-stat	R ²	T coeff.	t-stat	R ²
Hungary	-0.025	-0.171	-0.030	0.078	0.365	-0.027
Czechia	0.204	0.882	-0.007	0.049	0.366	-0.027
Slovakia	0.080	0.856	-0.008	-0.128	-0.850	-0.008
Poland	-0.026	-0.643	-0.018	-0.015	-0.083	-0.031

Absolute difference: absolute difference in the variable between the initial and final year.

Rank of differences: ranks of variables in the total sample of data, sorted according to the size of imports in the final year.

All products: all import products at the NACE-3 level (sample size: 82 to 99 products).

Largest products: the largest 35 import products at the NACE-3 level.

However, before we make any kind of conclusions, based on this first estimation, it is necessary to perform additional estimations to find out whether there exist other reasons (methodological, contextual) for these surprising results. If we can control for them, we might be able to get more significant results.

The first question that springs up is of a methodological nature: can the variability in the size of the absolute changes in import duties explain the variability of absolute changes in the size of changes of imports? Import duties for some products are, in absolute terms, far higher than for others, thus maybe an equivalent absolute change of import duties does not cause the same absolute changes in imports. Similarly, the value of imports of certain products is, in absolute terms, far higher than the value of imports of other products and thus in this case, too, equivalent absolute changes of import duties may not cause the same absolute changes in imports. These differences in the absolute value of the changes in the variables can be eliminated by using the method of correlation of the rankings of absolute changes in the variables. The results of an econometric estimation based on the correlation of rankings of changes in variables (in the upper right hand part of Table 5) show, again contrary to expectations, that there is no relationship at all between increased imports from CEFTA countries and the reduction of import duties.

Other methodological problems eventually related to the obtained insignificant results can be related to (1) the use of absolute instead of relative data (maybe the conversion of data on imports into units equivalent to those for import duties (percentage points) would give better results) and (2) the use of absolute instead of logarithmic data (cross-sectional econometric estimations on logarithmic data usually give better results than those on absolute data). Unfortunately, all estimations made by taking into account the above two methodological problems, give even worse results than those presented in Table 5 and I have thus not quoted them here.

The next problem, which could have a significant effect on the above estimations, is of a contextual nature. In an analysis of the commodity structure of Slovenia's trade with CEFTA countries we determined that Slovenia does not import a full spectrum of products from CEFTA countries (as it does from, for example, the EU). Instead Slovenia imports mostly raw materials and lower processed industrial products (with the exception of final industrial products –cars, for example, from the Czechia). In its trade with CEFTA countries, Slovenia thus has clearly defined preferences for certain products and it would therefore be logical to expect, that reduction of import duties for these products will have a significantly greater effect on imports of these products than a reduction of import duties for other products would. In econometric analysis this fact can be accounted for by performing regression analysis between the change of import duties and the change of imports only for those products for which there is a clear Slovenian preference for importing. To this goal, I have, for each individual CEFTA country, isolated only 35 of the biggest import products in the final year and performed the analysis both with absolute and with ranked data. Unfortunately, the results of both estimations (see the lower part of Table 5) are as unsatisfactory as for the first two estimations – similarly low and completely insignificant deterministic and regression coefficients. The conclusion is clear: liberalization of trade has had no effect even for products, which the Slovene economy and/or consumers most prefer in trade with CEFTA countries.

On the basis of the estimations, which have been performed, we can conclude that liberalization of trade with CEFTA countries has had no direct effect on the apparent large expansion of imports from these countries. So the question arises, why has such an expansion of imports from CEFTA countries come about, if not because of the free trade agreements that have been entered into? There are several possible explanations for this phenomenon.

The first explanation arises from historical reasons. The CEFTA countries were relatively closed before 1989 and although Slovenia traded with them, this trade was of a barter nature and thus the necessary incentives for increasing bilateral trade were not present. Trade between the countries was therefore significantly lower than it could have been. After 1989, when CEFTA countries started to open up both economically and in terms of trade, bilateral trade started autonomously growing and approaching the potentially possible extent (for an empirical illustration of this fact, see Majcen, Damijan and Erjavec (1997)).

The second explanation concerns the break-up of former Yugoslavia and the loss of supply markets for raw materials and semi-finished products and sales markets for finished industrial products. After the imposition

of trade barriers between the former Yugoslav republics in 1991 and the near total suspension of bilateral trade which followed (war, trade embargo), the Slovenian economy reoriented its excess demand for necessary inputs and its excess supply of finished industrial products towards the cost-effective markets of CEFTA countries and thus tried to compensate for the loss of Yugoslav markets both on the procurement and the sales side. On the procurement side this has been most apparent in the import of primary agricultural, food, wood, chemical and iron products as well as some other products intensive in raw materials. On the sales side this fact is reflected in increased exports of finished industrial products (mostly electrical apparatus and machines, pharmaceuticals, etc.).

3.2.2. The Effect of Changes in Domestic Demand on Increased Imports from CEFTA Countries

In view of the above-mentioned effects it would be possible to infer that it is quite possible that increased imports from CEFTA countries came about independently of the free trade agreements and that imports from these countries would have increased regardless of whether Slovenia had entered into free trade agreements with CEFTA countries. How can the effects of this factor, which autonomously affected the expansion of imports, be assessed? It can be done by analyzing the demand of the Slovenian economy and its consumers and determining whether the structural changes in domestic demand (independent of the liberalization of trade) have affected the expansion of imports from CEFTA countries. For this purpose I estimate the complete equation (1) i.e. also the domestic consumption variable is included in the model. The results of econometric analysis are shown in Table 6.

Taking into account all import products, the results clearly show that, with the exception of Hungary, changes in domestic consumption were an important determinant for increased imports from CEFTA countries (for Slovakia and Poland the regression coefficients for consumption are significant at a 99% confidence level and at a 90% confidence level for Czechia), whereas changes in import duties did not have a significant effect. Likewise, the deterministic coefficient for Czechia and Slovakia is relatively high (in view of the cross-section analyses performed). The value of regression coefficients for the consumption variable varies between 0.005 and 0.018 and can be interpreted in the following way. A USD 1 million increase in domestic demand for any particular product in the year 1998 as compared to the year 1993 results, on average, in an increase of imports of that product by USD 18 thousand from Czechia, USD 15 thousand for Slovakia and USD 5 thousand for Poland.

Table 6: The impact of reduction of import duties and of expansion of domestic consumption on the expansion of imports from CEFTA countries in the period 1993 - 1998.

Country	All products				Largest import products			
		T	C	R ²		T	C	R ²
Hungary	coeff.	-0.008	0.006	-0.011	coeff.	-0.046	0.010	-0.043
	<i>t-stat*</i>	-0.186	1.034	0.535	<i>t-stat*</i>	-0.333	0.750	0.306
Czechia	coeff.	0.035	0.018	0.026	coeff.	0.157	0.021	0.003
	<i>t-stat*</i>	0.478	1.915	2.129	<i>t-stat*</i>	0.697	1.129	1.058
Slovakia	coeff.	0.008	0.015	0.130	coeff.	0.038	0.020	0.192
	<i>t-stat*</i>	0.240	3.445	6.397	<i>t-stat*</i>	0.506	2.857	5.049
Poland	coeff.	-0.010	0.005	0.087	coeff.	-0.019	0.004	-0.003
	<i>t-stat*</i>	-0.916	2.901	4.846	<i>t-stat*</i>	-0.487	1.233	0.952

All products: all (except for agricultural products) import products at the NACE-3 level (sample size: 73 to 84 products). Largest products: the largest 35 import products at the NACE-3 level.

* F statistic for the deterministic coefficient

As it has already been mentioned the only exception is Hungary, where the regression coefficients for both import duties and consumption are not significantly different from zero (but with the correct sign). It means

that imports from Hungary during the period from 1993 to 1998 can be explained neither with mutual trade liberalization nor with the changes in domestic demand. A possible reason for this might be the fact, already stated in the second Section, that the increase in trade with Hungary was substantially smaller than that with other CEFTA countries.

To determine the possible effect of Slovenian preferences on increases in imports the equation (1) was estimated also on a sample of the largest import products from CEFTA countries (right hand side of Table 6). Taking into account only the largest import products, it becomes apparent that except in the case of Slovakia, the relationship between an increase in domestic consumption and the increase of imports from CEFTA countries disappears. The results are very interesting in respect of the first estimation, since they show that, with the exception of Slovakia, Slovenia has no fixed preferences for particular products within the whole imports from CEFTA countries. Another way around, it can also mean that the whole imports from CEFTA countries are performed according to the very special preferences of Slovenia's manufacturing sector and consumers.

3.2.3. The Impact of Trade Liberalization and of Changes in Domestic Demand on the Aggregate Expansion of Imports from EU and CEFTA Countries.

One of the possible reasons why in all the estimations that have been done, the liberalization of trade with CEFTA countries has proved to be insignificant for the increase of imports from these countries, is that the shares of individual CEFTA countries in total Slovenian imports are relatively small. It is possible that the changes of imports, separated by country, are simply too small or not significant enough in respect of the previous reduction of import trade barriers. It is possible that the effects of the reduction of import trade barriers are only apparent at the aggregate level, where there should be interference of the various countries' reactions, which would lead to more marked changes in Slovenian imports. To this end I have additionally assessed the effect of trade liberalization and changes in domestic demand on the increase of imports from CEFTA countries as a whole. For a sake of comparison, I have performed the same estimation also for EU countries. The results (see Table 7) are again very interesting, as they point to the fact, that even at the aggregate level (all the CEFTA countries combined) mutual trade liberalization within the framework of the CEFTA agreements had absolutely no effect on the increase of Slovenian imports from these countries. However, the increase of imports from CEFTA countries was mostly due to changes in the structure of Slovenian demand (the regression coefficients for domestic consumption have the correct sign and are statistically highly significant in both samples of data).

Table 7: The impact of reduction of import duties and increased domestic consumption on the increase of total imports from EU and CEFTA countries in the period 1993 - 1998.

N=89	EU (all products)			CEFTA (all products)		
	coeff. T	coeff. C	R ²	coeff. T	coeff. C	R ²
coeff.	-4.815	0.263	0.227	-0.002	0.047	0.133
t-stat*	-3.843	3.726	13.918	-0.023	3.890	7.768

N=35	EU (largest import products)			CEFTA (largest import products)		
	coeff. T	coeff. C	R ²	coeff. T	coeff. C	R ²
coeff.	-16.378	0.210	0.364	-0.031	0.051	0.091
t-stat*	-4.322	2.214	10.738	-0.125	2.267	2.698

All products: all (except agricultural produce) import products at the NACE-3 level (sample size: 89 products). Largest products: the largest 35 import products at the NACE-3 level.

* F statistic for the determining coefficient.

The most interesting fact comes from the estimation performed with data for EU countries. The results clearly show that the decrease in import duties for imports from EU countries, undertaken within the framework of various exemptions (imports for export production, etc.) and the implementation of the new Customs Tariff (effective by 1.1.1996) had a significant effect on the increase of imports. Similarly significant is the effect of changes in domestic demand on imports from the EU. The results improve even further, if the estimation is performed on a sample of only the largest import products – the regression coefficient for import duties and its statistical significance increase, whereas the coefficient for domestic consumption and its statistical significance decrease (but the effect of consumption is still significant). This empirically detected fact about the strong response of Slovenian imports to changes in import duties for products from EU countries is probably the result of two things:

1. of the pronounced preference of the Slovenian economy and consumers for products from EU countries, and
2. of the existing geographical structure of Slovenian foreign trade, since even a small reduction of import duties can have an absolute positive effect on imports from the EU, which results in importers reacting strongly to this reduction, since they do not convert the (total) reduction of import duties into a reduction of sales prices, but instead increase their profits.

Nevertheless, the results prove once more that the liberalization of trade with CEFTA countries within the framework of the free trade agreements, has not had any significant impact on the increase of imports from these countries. The most significant factor affecting the dynamics of imports from these countries has been domestic demand. The second conclusion is, that the EU is a substantially more important trading partner for Slovenia than the CEFTA countries and that trade liberalization within the framework of the accession agreement will have incomparably greater effects on increases in imports from the EU (the increased share of the EU in Slovenian imports at the expense of other regions). These two facts can be additionally reinforced with the direct interpretation of the results in Table 7 (complete data sample). An increase in domestic demand for a certain product of USD 1 million results in an average increase of imports from the EU by USD 263,000 and an increase of imports from CEFTA countries by USD 47,000. A single percentage point decrease in import duties for a certain product results in an average increase of imports of that product from the EU of USD 4.8 million whereas it has no significant effect on increase of imports from CEFTA countries.

3.2.4. The Impact of Trade Liberalization on the Increase of Slovenian Exports to CEFTA countries

The other aspect of trade liberalization within the framework of free trade agreements between Slovenia and CEFTA countries, which has the most importance for the Slovenian economy and economic policy, is the effect that a reduction of trade barriers by CEFTA countries has on expansion of Slovenian exports to these countries. The Slovenian economy needs large markets for its growth and thus the expanding economies of CEFTA countries represent an important opportunity for increasing Slovenian exports. At the same time, the possible confirmation of a relationship between the reduction of trade barriers by CEFTA countries and the resulting expansion of Slovenian exports would be a very important finding for Slovenian economic policy, confirming that the decision to enter into free trade agreements had been legitimate and advantageous for the Slovenian economy.

Before presenting the results it is necessary to mention the problems, which have appeared in the analysis of the export efficiency of free trade agreements. These are, of course, the common problems of the unavailability of data. There is mainly a lack of data on actual barriers, which CEFTA countries imposed on trade with Slovenia before the free trade agreements were entered into, as well as after the implementation of the agreements, when exports of Slovenian products to CEFTA countries should have been formally liberalized. Whereas both official tariff rates as well as the actual import duties paid for imports from CEFTA countries are available for Slovenia, the same cannot be said for the CEFTA countries: not even the former are available and much less the latter. To estimate the level of trade barriers to Slovenian imports in CEFTA countries before the signing of free trade agreements, I have used the official tariff rates of these countries for

third countries, published within the framework of the WTO. For the initial year (1993) I have thus taken the official post-Uruguay tariff rates of individual countries at the level of the 3-digit SITC. For the final year of the analysis (1996 or 1998) I tried to determine to what extent trade barriers had been eliminated within the framework of the agreements. Czechia and Slovakia have formally completely liberalized the import of industrial products from Slovenia and I thus assumed that the initial tariff rates had been cut to zero. For Hungary and Poland I lowered the initial tariff rates to the level agreed upon in the agreements. Based on this I obtained an estimate of the reduction of tariffs for the import of Slovenian products into CEFTA countries. This is of course a very rough and third-best estimate, which does not even come close (as in the case of Slovenia) to reflecting the actual level of import trade barriers for Slovenian products in these countries. After all, because of the different time-tables and methods of application of the individual protection measures, I did not even take into account linear import taxes and deposits, which these countries have used in the past to generally limit imports. My estimate is simply the best that it was possible to obtain on the basis of the limited data availability.

I have mentioned the other problem with data in the introduction to this Section. There is a lack of disaggregated data on industrial production in these countries. The highest available level of disaggregation is the 2-digit NACE, which encompasses 14 industries, but because of the lack of the necessary degrees of freedom, this sample is, of course, much too small for serious cross-section analysis). A consequence of this problem is, that it was not possible to estimate the complete equation (2) for CEFTA countries, but just its reduced version (elimination of the domestic consumption variable).

Table 8 presents the results of the econometric estimations, based on various assumptions. The results of the simplest estimation of the interdependence between the reduction of tariff rates in CEFTA countries and increased Slovenian exports during the period 1993 - 1998 (see the upper right hand part of Table 8) show a similar picture as the analysis on the import side: there is no significant relationship between the variables.

In the second estimation I have eliminated differences in the absolute size of the changes in the variables and tested the relationship between ranked variables. In this case the result of the test is just slightly better: in three out of four cases the signs of variables are correct (negative), but of the two only the regression coefficient for Czechia is significantly different from zero (at a 90% confidence level). Thus for Czechia we could conditionally say, that there is a certain relationship between the reduction of Czech import duties and increased Slovenian exports to Czechia.

In the third estimation I try to determine the effect of potential preferences of companies and consumers in CEFTA countries for specific Slovenian products. In cases where such clearly defined preferences exist, there should be a significant inverse relationship between the reduction of tariff rates in CEFTA countries and increased Slovenian exports. But unfortunately, the existence of such preferences in CEFTA countries is not very likely, as Slovenia exports a very differentiated palette of industrial products to these countries. The structure of Slovenian exports to CEFTA countries is substantially more disaggregated than the structure of imports from these countries (perhaps a specific exception here is the very concentrated export of pharmaceuticals to Poland). The results of the estimations on the sample of the largest Slovenian export products (see lower section of Table 8) confirm these fears, since all deterministic and regression coefficients remain insignificant.

Table 8: The impact of reduction of official tariff rates in CEFTA countries on increased Slovenian exports to individual CEFTA countries in the period 1993 - 1996.

N=136-178	Difference (all products)			Rank of differences (all products)		
Country	coeff. T	t-stat	R ²	coeff. T	t-stat	R ²
Hungary	-6.734	-0.632	-0.003	-0.051	-0.674	-0.003
Czechia	5.425	0.267	-0.006	-0.140	-1.809	0.014
Slovakia	6.758	0.246	-0.006	-0.036	-0.440	-0.005
Poland	0.293	0.019	-0.007	0.036	0.440	-0.006

N=35	Difference (largest export products)			Rank of differences (largest export products)		
Country	coeff. T	t-stat	R ²	coeff. T	t-stat	R ²
Hungary	-119.045	-1.306	0.020	-0.323	-1.182	0.012
Czechia	4.952	0.520	-0.022	-0.020	-0.185	-0.029
Slovakia	4.943	0.398	-0.025	-0.035	-0.267	-0.028
Poland	-6.604	-0.159	-0.030	-0.081	-0.429	-0.025

All products: all export products at the SITC-3 level (sample size: 136 to 178 products).
Largest products: largest 35 export products at the SITC-3 level.

On the basis of the estimations, which have been performed, we can conclude that no significant relationship can be determined between the reduction of tariff rates in CEFTA countries and increased Slovenian exports to these countries. It is obvious, that increased Slovenian exports to CEFTA countries are more an autonomous expansion of exports, which is independent of the simultaneous trade liberalization. Since 1993, because of their relative proximity and increasing purchasing power of the consumers, the CEFTA countries evidently represent a promising market for the Slovenian economy, to which it is worth exporting regardless of existing trade barriers for imports. If the necessary data on domestic consumption in CEFTA countries was available, we could probably show that it was changes in the structure of their effective demand, which have drawn Slovenian exporters and not the reduction of tariffs.

Contrary to expectations, Slovenian economic policy for the liberalization of trade with CEFTA countries did not succeed in affecting the expansion of bilateral trade flows. But it must nevertheless be acknowledged, that a major step forward was made by allowing Slovenian companies nearly completely free access to CEFTA countries' markets several years earlier than this status will be granted to EU companies (probably no sooner than at the end of 2001). For small Slovenian companies, which usually have little possibility for major capital investments abroad, this status will in the future mean an important advantage in achieving and preserving market share on these rapidly growing markets.

4. CONCLUSION

In this paper I study the reasons for the sizeable expansion of bilateral trade between Slovenia and CEFTA countries in the period from 1993 to 1998. I am mainly concerned with the issue of whether the expansion of bilateral trade was due to the reduction of trade barriers or whether it was autonomous and would have occurred regardless of the free trade agreement.

Econometric estimations in the paper show that trade liberalization with CEFTA countries did not have any direct impact on large expansion of imports from these countries or on increased exports to these countries. The econometric estimations show that the expansion of Slovenian exports to these countries occurred independently of the free trade agreements, and that imports from these countries would have increased even if Slovenia had not entered into the free trade agreements with them. The main reason for this is domestic demand, which after the loss of the former Yugoslav markets was seeking an appropriate substitute for certain deficient raw materials and semi-finished industrial products. With the imposition of barriers on trade with the former Yugoslav republics and the near complete suspension of bilateral trade which followed (war, trade embargo) Slovenia redirected its demand for the necessary inputs to the cost-effective markets of CEFTA countries. The liberalization of trade with CEFTA countries and Slovenia's reorientation of foreign trade took place simultaneously, but a deciding impact was most certainly the autonomous reorientation of trade due to the reasons listed above and trade liberalization only served to increase the cost-effectiveness of reorienting trade.